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Identifying Preconceptions of Clinical Research in Swiss Allied Health and Nursing Researchers

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ABSTRACT

Purpose: In the context of training health professionals in Switzerland in evidence-based practice, the preconceptions of active researchers might be playing a major role in the development of research methodologies within allied health and nursing professions (AHNP). The objective of this study was to identify the preconceptions (understanding of the meaning of clinical research) of researchers in AHNP at the Health Schools of the University of Applied Sciences, Western Switzerland (UASWS). Emerging theories were then discussed and challenged with available literature and participant profiles. **Method:** Anonymous semi-directed interviews of 20 researchers (internal and external to the university) arising from various professions, including medical and non-AHNP, were conducted between 2007 and 2008. **Results:** Preconceptions were grouped into eight categories that were used by 64% of participants (SD 21.8), indicating that the categories worked well in evoking participants' preconceptions. Categories of themes covering the dimensions of clinical research definition are limits, aim, fields of professional application, professional identity, education, sensitivity of term, associated images, and relevance of a definition. **Conclusion:** Nurses appear to have specific preconceptions about clinical research. Due to their dominance in terms of number of professionals, they play a determining role in the development of research in AHNP in Switzerland. Researchers in the health division of the UASWS are suffering from a lack of access to experimental research and training in Switzerland. The methodological background experience of researchers seems to play a role in the understanding of clinical research, as from the available results researchers with an experimental background seem to have a larger definition of clinical research. **Recommendation:** authors recommend the use of the term "patient oriented clinical research" for AHNP when talking about CR.

DEFINITIONS

Preconception of Clinical Research

In this study, preconception is defined as an idea or an understanding of the meaning of clinical research (CR). Preconceptions of CR can vary. This motivated the authors to establish current preconceptions of CR within AHNP in Switzerland.

Allied Health and Nursing Professions in Switzerland

Allied health professions in Switzerland generally refer to non-medical professions such as physiotherapists, dieticians, midwives, occupational therapists, psychometricians, and radiology technicians. Nursing professions have their own areas of specialty.

Clinical Research Definition

Etymologically, according to the online Merriam-Webster dictionary (<http://www.merriam-webster.com/dictionary/clinic>), the noun "clinic" comes from the French "clinique", from the Greek "klinikē", meaning medical practice at the sickbed, from the feminine of "klinikos" of a bed, from "klinē" bed, and from "klinein" to lean or recline. The word "clinic" was initially not specifically dedicated to physicians, but in the late 18th and 19th century, it became a word almost limited to physicians, as described by Foucault (1963) regarding the origins of the word "clinic".¹

Institutional or governmental definitions of clinical research are available in many countries. They usually refer to a patient oriented definition with the very broad aim of improving health. The definition of the National Institute of Health (NIH) in the USA was used in this study as described as a consensus definition (<http://www.nichd.nih.gov/health/clinicalresearch/>). The Swiss National Science Foundation (SNSF) is using similar reference to patient oriented research and has created a patient-oriented research board (Paklif) (<http://www.snf.ch/E/aboutus/organisation/Pages/default.aspx>).

BACKGROUND

In 2004, the education of allied health and nursing professionals (AHNP) shifted from a secondary to a tertiary level in Switzerland and enabled the creation of applied sciences universities. Research training is therefore recent in these professions. As a consequence, allied health research is in a developmental stage in Switzerland due to a number of reasons, such as historical, political, educational, and cultural causes. While research published by AHNP is now well recognized in the USA, Canada, Australia, the UK and Scandinavian countries, it is difficult for AHNP researchers in Switzerland to undertake and publish good quality CR. This situation currently places AHNP in a difficult position justifying the role of those professions with regard to the evidence underpinning treatment decisions, practice efficiency, quality management, and costs of healthcare in Switzerland.

In 2004, a research and development board at the University of Applied Sciences of Western Switzerland (UASWS) designed a very complicated research support structure with four research competency networks. These competency networks represent social and health professions, and have the intent of providing support and guidance to AHNP researchers in undertaking research projects. They play a direct role in the attribution of financial support to projects lodged by AHNP researchers. However of the four networks, only one network presents themes of research that can be interpreted as CR. Examination of the themes of research of these competency networks and the composition of boards and funding sources for the UASWS identified that the dominating research profile of experts and researchers arises largely from social sciences (cf. Appendix II). Furthermore, an unpublished internal research report revealed that financially supported research studies were dominantly descriptive and naturalistic (non experimental) in their methodology. Funded studies with epidemiological and experimental methodologies were clearly small in numbers as can be seen in the 2000-2006 research activity reports.²

During internal meetings of the multidisciplinary research unit, it appeared that researchers were using different meanings of the term "clinical research," thus highlighting the need for further investigation of the concept of CR relevant to the different professional groups that represent AHNP.

Hurdles to the Development of CR

AHNP knowledge is at the intersection between human and biomedical sciences. At the beginning of the 21st century, these professions have evolved according to political and economical drivers such as definition of health, cost of care, professional recognition and tertiary education level, while focusing on playing a major role in the care of humans. However, in Switzerland, there have been two major obstacles to the development of clinical research within the university setting: the preconception of CR of health professionals and the lack of methodological skills in research.

Referring to the Swiss Science and Technology Council (SSTC) and the World Health Organization (WHO) guidance for CR implementation, it appears that several hurdles such as some recognition of the medical world and to some extent the evolving research skills of AHNP researchers have been removed for AHNP to undertake CR as project directors and main authors.^{3,4}

The current definitions of CR indicate that AHNP is clearly concerned by CR questions (cf. clinical research definitions paragraph). The availability of peer-reviewed periodicals arising from AHNP from Anglo-Saxon, Scandinavian, Asian, and oceanic countries over the last decade in recognized impact factor journals (Physical Therapy Journal, Journal of the American Dietetic Association, Journal of Nursing Education, Midwifery, etc.) also supports this argument. However, the remaining hurdles such as accessible academic postgraduate training, preconceptions, and laws may not be easy to remove in Switzerland. For instance, the preconceptions of CR of AHNP, and also those of the medical professions, can be difficult to influence. As in many other countries, sources of sustainable research funding for AHNP research are an ongoing concern.

Legal Context for AHNP

A recent evaluation of the Swiss health system performed by the Organisation for Economic Co-ordination and Development (OECD) and the WHO emphasized the necessity for health providers to ensure quality in their practice.⁵ Furthermore, it is necessary for health providers to document their practice and their efficiency, as is clearly mentioned since 1994 in the Swiss Health Law for illness conditions.⁶

This paper reports on the preconceptions of a sample of 20 health researchers regarding CR in their related contexts. By collating these preconceptions, it allowed us to identify and challenge emerging notions of research for AHNP.

A better understanding of AHNP preconceptions of CR would assist the progression of research in AHNP in Switzerland. The SNSF, a major source of funding in Switzerland, is clearly defining the so-called "patient orientated clinical research" (POCR) as a reference terminology and not limiting it to the methodological approach.

This study may assist AHNP clinicians in Switzerland to better understand each other and communicate appropriately. For researchers and educators in other countries, this paper may provide useful information regarding research and AHNP in a country in which such research is in its infancy. This may unite AHNP researchers and educators around the world regarding the need for collaboration to develop a research approach that recognizes the specific requirements of AHNP.

METHODS

Mixed Methods

The mixed method approach was chosen to answer the following questions: What are the preconceptions of CR in Swiss AHNP researchers? What are the arguments supporting/contradicting these preconceptions in the literature?

As mentioned by Pope, the aim of combining methods could be linked to the answering of two distinctive research questions with similar importance.⁷ It was relevant not only to make emerging preconceptions, but also to challenge them with references available from the literature and with each participant's background and professional profile (cf. background chapter and appendix I).

Qualitative Dimension

Ethics approval was given by the Multidisciplinary Board of the UASWS, Health School, Geneva. The analytic method used for preconceptions emergence was inspired by the "Grounded theory" of Glaser and Strauss.⁸ In this context, theory is not only emerging from interviews, but also from meetings, sessions, and discussions with research actors. The interviews were exploratory in the sense that it was not possible to control all aspects of the studied phenomenon.⁹ Extreme cases have been taken into account in order to improve the reliability of the analyses and results, as mentioned by Glaser and Strauss.⁸

Questions referring to clinical research and its definition were conducted using open questions in order to limit halo effects and internal subjectivity brought by the interviewer (cf. Appendix III). However, as described by Blanchet, beyond the identified subjectivity as a potential bias, validity was maintained by the interviewing procedure, previous preparation of an interview protocol coherent with the sought data, and selective orientation of the interview respecting study objectives.⁹

Participants

A selection of 21 participants was established using the criteria described below. An average of 20 participants for semi-structured interviews is commonly agreed as being sufficient to reach saturation.⁹ This was confirmed by the attainment of saturation before the end of the 20 interviews, indicating that a sufficient number of interviews with good representativeness of participants were included.

Inclusion criteria

There was at least one participant per health school and among individuals holding decisional positions. A quarter of the participants were external to UASWS, including physicians. UASWS research staff involved in research funded by the DORE instance or UASWS funding instance were also included. As a result, there were no participants from the radiology technician school at that time.

Representativeness scheme and participant profile

- UASWS Professors, head of health research competency network ($n=3$)
- Coordinator of social-health research competencies ($n=2$)
- Professor experienced in AHNP research from another culture and language unaffiliated with the UASWS ($n=1$)
- Physician, head of clinical research platform ($n=1$)
- Physician implied in the education of clinical research that interacts with UASWS researchers ($n=2$)

- Member of the DORE scientific board of the Swiss National Science Foundation ($n=1$)
- Member of the division III scientific board and the patient orientated clinical research board of the Swiss National Science Foundation ($n=1$)
- Head of an education domain of the UASWS ($n=0$)
- Researchers-Educators ($n=9$)

Research Team

The research team was composed of two UASWS professors from two different schools with previous experience in CR. According to the applied methods and the sensitivity of research questions, the presence of two researchers was justified by the necessity for inter-subjective validity and possible distance from the study. All notes taken during the study were reported in a notebook.

Procedure

After oral consent and explanation of anonymity measures, participants to the study were asked to provide authors with published material in order to create a background profile. The authors purposefully used the consensus definition of the U.S. National Institutes of Health (NIH) in both the original English version (Table 1) and a French translation, as well as the concept of translational research in order to elicit reactions and comments from the participants.¹⁰ This was performed only after the participants were prompted to provide their own definition.

The argument for doing so was to challenge the participants with their own definition before being challenged by an official so-called "consensus definition" issued from the NIH. The authors were fully aware that this could trigger secondary reactions following their own definition and also allow for further preconceptions emergence due to the eventual emotional aspects related to the individual situation and perspective. This allowed the interviewer to manage the situation and be prepared with follow-up questions while fully respecting the participants.

Finally, the interviewer asked the opinion of the participant by qualifying the NIH definition using one or two adjectives.

Table 1: NIH Definition of Clinical Research

Research conducted with human subjects (or on material of human origin such as tissues, specimens, and cognitive phenomena) for which an investigator (or colleague) directly interacts with human subjects. Excluded from this definition are *in vitro* studies that utilize human tissues that cannot be linked to a living individual.

(1) Patient-oriented research

Includes: (a) mechanisms of human disease, (b) therapeutic interventions, (c) clinical trials, and (d) development of new technologies

(2) Epidemiologic and behavioral studies

(3) Outcomes research and health services research.

Data were recorded with a digital microphone recorder and saved on an external hard drive secured at the research premises of UASWS.

A global transcription of the interviews was made in order to extract the wording of participants. All collected data were anonymized and stored in a safe and secured room of the UASWS, Health School, Geneva.

Content analysis was achieved by the two authors using a coding system with a division of the speech by "meaning units" and related categorization work in order to extract shared meanings.

Content interpretation allowed an explanatory construction and revealed hidden meanings. An emphasis of emerging theories was undertaken using crosschecks. The reading was performed in the presence of both researchers, who found a consensus in order to increase the inter-subjective reliability of the categories.

Participant Profile

The profile of participants was analyzed taking into account the publications, the professional education, and the description of the participants experience during the interviews. The classification was made following 2 or 3 axes using the naturalistic, experimental, and mixed denominators. Participants with experience in experimental and naturalistic research were classified as “mixed” when considering 3 axes of profile. In the 2 axes profile classification, the most relevant experience of participants in type of studies (naturalistic-non experimental or experimental approaches) was considered.

Quantitative dimension

The analysis of the collected research publications arising from participants that were a part of UASWS allowed the identification of the researchers’ background, i.e., the methodologies managed by the participants and to be challenged by preconceptions. Based on their professional education and published research, the participants’ profiles were qualified as naturalistic, experimental, or mixed for researchers involved in both approaches or, eventually, in a mixed method approach.

Statistical procedure

The means and standard deviations were calculated for the basic data obtained from the participants.

The use of categories for participants was calculated as a percentage of use.

Comparisons of the percentage of category usage between the participant’s professional profile, research background, NIH definition qualifications, and preconceptions category (categorical data) were calculated using the number of expressed meaning units per category; this comparison revealed interesting tendencies, but was not applicable to the general population of researchers due to the number of participants. However, based on the representativeness of participants and the saturation before the end of the interviews, quantitative results can be considered as good indicators of researcher preconceptions.

RESULTS

The profiles of participants are described in table 2.

Table 2: Summary of participant profiles

Average age (years)	49.7
Standard deviation	8.8
Males (n)	5
Females (n)	15
Represented professions	n
Nurses	6
Dietician	1
Physiotherapists	3
Sociologist	1
Socio-anthropologist	1
Midwife	1
Psychometrician	1
Occupational therapists	2
Physicians	4

Categories of Themes Covering the Dimensions of Definitions

Content analysis of the interviews revealed the emergence of eight categories of themes covering the dimensions of defining clinical research (preconceptions). Meaningful units arising from integral interview transcriptions were classified by thematic categories in table 3.

Table 3: Categories of themes arising from integral interviews

Limits (Research methods, application field: direct or indirect on human beings and related tissues: healthy/ill; researcher as health professional or not; clinical research history, etc.)
Aim (Health improvement; interventions, competencies, quality management improvement, etc.)
Professional application fields (Medico-technical, non-medical, multidisciplinary, etc.)
Professional identity (Academic independence; professional identity: specificity, visibility, publications; professional independence, valorization, federation of allied health professions, corporatism, recognition, claims, position, political flag, legitimacy, political need, funding realities, knowledge (medical, academic) provision, and delegation, creation of university divisions, etc.)
Education (Culture, identity, Anglo-Saxon model, postgraduate training (notably in research), methodological skills, knowledge access, etc.)
Sensitivity of terms (Focusing fears, intra and extra-disciplinary conflicts)
Associated images
Relevance of a definition

Opinion of participants about the NIH definition

The opinion of participants about the NIH definition was summarized by the adjectives enumerated in table 4.

Table 4: Opinion of NIH definition (qualification adjectives)

Collected adjectives
Open
Closed
Rigid
Restrictive
Useless
Large
Biomedical
Incomplete
Elastic
Patient oriented
American
Subjective

Use of Major Categories by Participants

The following results can only be indicative for the population of active UASWS researchers. They are consequences of percentage of usage of categories showing relevant tendencies between the participants' professional profile and research backgrounds. The aim is not a generalization of the population, but rather to represent quantitative aspects of the studied sample participants, who were asked exactly the same question regarding these results.¹¹

As seen in Figure 1, the category most referred to is about the limit of CR, and the least is about the sensitivity of the term CR.

Figure 1: percentage of use of major categories in the 20 interviews

Sixty-four percent (SD 21.8) of the evoked categories, on average, were used by all participants. This indicates good coverage of the dimensions of preconceptions of all participants. The categories worked well in evoking participants' preconceptions. The dimensions of preconceptions seem to be highest in midwives (88%), while the lowest are in physiotherapists (53%). The dimensions of preconceptions also seem to be wider among naturalistic backgrounds (78%) compared to experimental backgrounds (53%).

In Figures 2 and 3, it clearly appears that the use of the NIH consensus definition was successful in revealing the preconceptions of participants. Marked differences between the methodological backgrounds and professional education are visible. The studied population was not selected to be representative of all UASWS collaborators due to their number, as they were selected only according to the inclusion criteria and stratified professions.

Figure 2: the opinion regarding the NIH definition per profession and per individual

Figure 3: The opinion regarding the NIH definition per methodological background and individual

DISCUSSION

Challenging Contradicted Preconceptions of Participants with the Literature (Translated from French language interview transcriptions)

The following are the most contradicted preconceptions about CR potentially limiting its development within the UASWS. In the following paragraph, the authors selected only preconceptions with a potential contradiction available in the literature to call them "contradicted".

"...Synonymous with clinical trials (effects of interventions and medication on humans)..."

CR is considered in a much larger way by Swiss funding instances, as well as American funding instances, compared to the studied sample of nurses or researchers working in nursing schools. Furthermore, the WHO mentions that clinical trials involving humans are not just about pharmaceuticals or drugs.⁴

"...Reserved for the medical world..."

The Swiss Science and Technology Council (SSTC) mentions the following in its 2006 report:

"The concept of medicine has changed since the awareness of human beings and the influence of the environment on humans are more and more commonly the cause of disease and death. Medicine was always focused on disease; today humans and their behaviors have to be equally considered as major preoccupations...."

The same report gives the following recommendations for research:

"It is advised to promote even more research conducted by multidisciplinary teams arising not only from biomedical, but also from social and human sciences backgrounds...."³

"...UASWS researchers may become the "little hands" of physicians performing clinical research..."

As early as 2002, the same SSTC noted the following:

"...Titulars of graduations in nursing sciences [...] are still rare in Switzerland, in contrast to what happens in Anglo-Saxon, Scandinavian countries, and the Netherlands, where the quality of clinical research is superior to ours, notably because it is associated with the services of experts in nursing care. In order to organize and conduct clinical studies, titulars of graduations in nursing sciences possess better skills than degree-holding physicians."¹²

However, besides these intentions, this concept also gains some ground in Switzerland based on the fact that in the Geneva canton, a law clearly limits conducting clinical research without any distinction of a CR definition for physicians. AHNP researchers are not authorized to conduct CR without the presence of a physician, despite non-invasive methods (Article 61 of the Health Law K103 of the canton Geneva, Switzerland).

“...Only limited to people facing disease...”

The definition of health has evolved since the initial WHO definition in 1948, which is currently considered as idealist.¹³ This definition has been progressively replaced by the definition of disease.¹⁴ The increase in chronic conditions and the fact that the cured condition is rarely reached in severe disease have resulted in the modification of the notion of health. The literature regarding health and diseases helps one to understand why the definition of CR has evolved parallel to health definitions. The search for health has increased the care of humans outside of the hospital.

Emerging Theories behind Researcher Preconceptions

Terminology Confusion

As stated in the introduction, this study was initiated after considering different use and understandings of the CR term. Differences in methodological background were also apparent. The WHO defines clinical research as a synonym of clinical trial, and the use of human research for what funding instances call clinical research (cf. Appendix I) is certainly not helping to clarify what CR means to researchers. As mentioned above, the shift in the definition of health is clearly creating some shifts in researcher preconceptions and can explain the difference in preconceptions.

Terminology is therefore not always helpful for researchers, is a potential generator of confusion, and may cause an increase in the gap between naturalistic and experimental researchers. Qualitative and quantitative terms could either refer to research methods or to research types, increasing the confusion. It should be clear that, when talking about methods, quantitative or qualitative terms could be used in descriptive, epidemiological, and experimental studies. Therefore, the use of qualitative or quantitative terms when referring to research does not seem to be ideal, as it creates confusion between types of research and research methods. A common culture of research would help future researchers to be clearer with research fundamentals.

Abundance and Relevance of a Definition for CR

It was consistently perceived during the interviews that the relevance of a CR definition only made sense if it allowed researchers to be labeled clinical in order to access research funding. There is abundance of definitions, and to some extent, preconceptions, but if a reference is made to funding instances as national research funding instances, it appears that in Switzerland, as in the U.S.A., the term clinical is a flag that can represent CR undertaken by AHNP.

Lack of Experimental Research Skills

The lack of experimental skills is the most supported emerging theory looking at the factual aspects, such as the profile of members of funding instances, competency networks, and the dominance of projects funded by the DORE funding instance of the SNSF (cf. background chapter). However, this is primarily due to the fact that not many researchers with an AHNP education undertook experimental research training and/or participated in international level projects. However, based on the interviews, there are also researchers with experimental background and experience who reported an unfair evaluation of their projects by experts from the DORE funding instance. The management of research within the UASWS was also questioned herein, as it is very surprising that there was no push or support to encourage training in experimental research. The specificity of AHNP requires knowledge in both experimental and non-experimental research as well in funding instances expertise.

Interviewed UASWS researchers, in a large majority of cases, supported the fact that there is a lack of experimental knowledge within the UASWS and a lack of representativeness in decisional instances, such as funding and research competency networks, in the health domain.

Based on percentage of category usage showing the link between professional background and the specificity of expressed preconceptions, particularly with regard to nurses, this could play a major role not only in the lack of development of experimental research, but also in the development of CR. Examination of the presence of preconceptions that reduce CR to experimental research reveals that this could also explain the absence of CR mention in a research competency network. The presence of researchers without education in the profession that they are representing could also play a role in understanding the interests of AHNP to develop this type of research.

AHNP deserve to receive fair and balanced support from funding instances and competency networks in order to allow practice intervention evaluations, and thus answer the legal requirements of the Swiss health law (cf. background chapter).

Fears

The internal political pressure for undertaking research in order to maintain a position is a reflection of the external political pressure placed on the UASWS. The recognition of each division (Health, Social Work, Engineering, Arts and Music, Education) was clearly related to research production. The pressure of stakeholders on every health profession in order to justify costs and the relevance of interventions also creates a lot of expectations from professionals about the research projects.

The fear is palpable in every individual researcher, but it is rarely directly expressed. The uncertainty of the future of research is described, and frustration regarding the lack of time and critiques about the established system are the most frequent expressions of fear. It is interesting to note that fear seems to be even more palpable among researchers with a qualitative background. Some even asked whether the future of research in the health and social division would only be “clinical” in the future. Considering the concept of CR, this could be easily understood if reduced to experimental research.

Fear was also palpable through the emotions, affective reactions, defensive reactions, constitution of closed groups, self-retraction, and very often strong critique of what someone pretends to know and often does not know. These are human reactions to facing fear or a threat.

The effects of fear, lack of recognition, research culture, and life experiences are major obstacles to communication and to the development of research within the UASWS.

Methodological Issues

The naturalistic versus experimental methodologies is a philosophical and historical issue that refers back to start of the experimental research definition. It also possesses, to some extent, an individual affinity with mathematics or statistics or with human relationships. Historically, there is also the known opposition between science and literature or art. The perception of reality is very different depending on the perspective of implicated researchers. There is a place for both approaches in AHNP. Based on the available information, it can be reasonably considered to support both methodological approaches as susceptible to answering specific research questions alone or in combination. The rigor, validity, and bias limiting management should be a consensus for considering both approaches as scientific.

Examining the current definition of funding instances, the vision for future physicians training in the 2006 SSTC report, and the common interest of AHNP, a methodological division between naturalistic and experimental researchers does not make sense.¹ There are clear opportunities for research projects in a joint effort using both approaches, as fully justified in the answers to questions regarding humans in the professional context of AHNP.

Particularities of Nursing Preconceptions

Examining the nursing preconceptions, and in particular, the marked difference in physicians preconceptions, it was relevant to consider these two professions in close relationship now and in the past. As nurses dominate the number of UASWS students and staff, it was relevant to pay attention to the preconceptions of nurses in this study.

Nursing science is still in the developmental stage in Switzerland. There is a model in Basel in which nurses were integrated into the medical faculty in order to conduct research projects. However, this model is contested as being adaptable to Western Switzerland and to the recent development of nursing research. In Eastern Switzerland, CR is supported by nurses obviously closer to Anglo-Saxon influences in regard to research. In the present study, the preconceptions of nurses were homogenous and close to their practical context, which is closer to physicians. The particularities of the hospital environment and hierarchical aspects have historical roots that are not similar to colonial Anglo-Saxon countries, in which previously trained nurses started training schools for nurses and were not trained by physicians. In Switzerland, as in other countries, nurses have placed so much energy into their independence with physicians and the development of specific nursing sciences that they apparently do not perceive the emergence of CR as a positive thing in the UASWS.

Analysis of the literature provided some clear signs that CR is strongly associated with professional development and academic independence.^{3,15,16} The results of percentage of category usage in this study also indicate that other health professionals tend to have less contradicting preconceptions towards CR and to collaborate with physicians.

Cultural Aspects

As is apparent in nursing professions, there is clearly a cultural influence on AHNP preconceptions in Switzerland. The French part (Western Switzerland) is under the cultural influence of France. The Eastern and Southern part of Switzerland are under the influence of Germany and Italy, respectively. The historical philosophical currents called cartesianism (Descartes) and pragmatism (Peirce) are to some extent potential explainers of differences between the French and Anglo-Saxon cultures (linked to German roots as well).^{17,18} This could itself be a topic for further study.

Political and Educational Issues

From the people in charge of the future directions of physician education, the SSTC 2002 report underlines the competencies of university level nurses in conducting CR.¹² The medical world is also calling for experimental research competencies from the nursing sciences. This is not without risk of increasing controversy between methodological currents, even if in a report from the Swiss Medical Association it is mentioned that, after the Bologna process introduction (signed accords in Bologna, 1999; the Bologna Process is a European reform process aimed at establishing a European Higher Education Area by 2010), future hierarchical positions between physicians and other health professionals are difficult to predict.¹⁹

Limitations of the Study

- A cause and effect relationship between quantitative and qualitative dimensions cannot be made.
- Due to the interactions between interviewers and interviewees, it is very difficult to state whether the categories of themes around the definition of CR is a result of preconceptions or of the knowledge gained.
- The unavoidable subjectivity borne by the authors and their connection to small health schools (in size) was reduced to a minimum level by the methods used, the rigorous analysis of the collected data, and their integral transcription. However, these factors still limit the validity of the study.
- The methodological background of the authors was compensated for by intensive examination of the qualitative methods before the start of the study.

Complementary Study

A survey of the same participants analyzing the practical conditions of research in the UASWS was conducted in 2008. In summary, participants reported insufficient time availability for research activities compared to educational activities, and a lack of training of researchers. Difficulties with the administrative management of UASWS were also reported regarding funding opportunities information, research organization and communication, and a lack of research culture of the administrative staff.

Further Study

It would be particularly interesting to understand why researchers with an experimental background could have a larger definition of CR. A study analyzing the same interviews to identify social representations would be relevant.

CONCLUSION

Preconceptions of the dominating profession by numbers, i.e., nurses, are very similar. These preconceptions are probably related to their specific history and relationship with the medical world. Nurses will therefore play a major role in the evolution of CR development within the UASWS. The situation seems to be considerably limiting to the development of research within smaller schools of the health division of UASWS. Allied health professionals are suffering from the current situation, as they are very dependent on the development of CR in order to create research projects. Researchers in the health division of the UASWS are suffering from a lack of access to experimental research and training in Switzerland.

Based on the studied population of researchers, the methodological background and the professional education seem to play a major role in the CR preconceptions. The better someone knows experimental research, the larger is the definition of CR. Based on the results of this study and the references to official funding instances, the authors recommend the use of the term "patient oriented clinical research" for AHNP when talking about CR in order to avoid any misunderstanding between CR as biomedical research and CR as involving human dimensions. It is also better for representing the competencies of AHNP.

The development of mixed methods might be a relevant direction in order to value the available competencies and answer research questions specific to AHNP. Despite the very specific situation of a single country, there are always points that can be shared or experiences that can be beneficial to others. Allied health and nursing professions have a common interest in participating with the development of research across geographical borders.

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APPENDIX I – DEFINITIONS OF OFFICIAL INSTANCES OF CLINICAL RESEARCH

SNSF, specialized board for POGR, definition (personal communication –English version):

- Clinical and epidemiological (C&E) research includes investigations on persons to explore medical issues, either through direct human participation or by analyzing records with individual data on health or lifestyle.
- C&E research aims at improving the effectiveness, appropriateness, safety, cost-effectiveness, accessibility, and equity in health care.
- Anticipated results of this research should have immediate or short-term implications for health care
- C&E research addresses questions that are relevant to clinical practice at primary, secondary, and tertiary levels of care, with an emphasis on prevention, diagnosis, treatment, and prognosis

Swiss Office of Professional Education and Technology (OPET) definition (2002) (translated from French) :

“...CR studies the diagnosis, cause, evolution, treatment, and prevention of human diseases. Its field is broad and includes a large panel ranging from studies about human pathological patrimonies (genes) and the treatment of these alterations by gene therapy to risk factors and preventive measures research for elderly falls and related fractures...”.

WHO definition of clinical research

In its document about the standard operating procedures for clinical investigators (unauthorized diffusion to the general public), the WHO defines clinical study as being the same as clinical trial. However, on the WHO webpage, the registry platform for the international clinical trial (ICTRP - <http://www.who.int/ictcp/en/>), WHO does not reduce clinical trial to biomedical research or drug effects trials.

Again, the WHO defines clinical research the same as the clinical trial in the Handbook for good clinical research published in 2002, but does not reduce clinical trial biomedical research. However, it is interesting to note that what the WHO calls human research might be what other instances such as NIH or SNSF are currently designating as CR.

APPENDIX II – RESEARCH FUNDING INSTANCES AVAILABLE FOR UASWS

1. The Swiss National Science Foundation structure

The SNFR is organized in divisions and specialized boards:

- Division I – Social and Human Sciences & DORE board for the applied sciences universities
- Division II – Mathematics, Natural Sciences, and Engineering Sciences
- Division III- Biology and Medicine :
 - Section A : Experimental Biology and Medicine
 - Section B : Clinical, Social, and Preventive Medicine
 - Patient Orientated Specialized Board
- Division IV – Orientated Research :
 - National Research Programs
- National Research Groups
- Specialized Boards :
 - Multidisciplinary Research
 - Individual Encouragement Programs
 - International Cooperation

2. The Federal Office of Professional Education and Technology structure (OPET)

This instance is a governmental office open to all disciplines offering funding opportunities through its agency for the promotion of innovation (CTI). Health professions can benefit from CTI funding, but under specific circumstances such as the implication of an industrial partner investing either money or time in the project.

3. The University of Applied Sciences, Western Switzerland structure

a. The center of cultural diversity and citizenship study in health and social work domains (CEDIC)

Research themes: Study of phenomena regarding diversity constructs in sociocultural groups and related conflicts; transfer of the results of studies about action procedures in the perspective of professional practice adjustment to a constantly moving plural society.

b. The network of studies between health and social work borders (RECSS)

Research problematics around contact zones between health and social work, including political, economical, legal, and educational issues; study of the relationships between different people concerned by new social regulations.

c. The network of applied studies of health, readaptation/reinsertion (RESAR)

Study of the profile of clients of the socio-sanitary system, their representations, and the answer given by professionals regarding encountered problems. A particular point of interest is made regarding the entrance and exit points of the socio-sanitary system. (This network recently decided to also mention clinical research, but not to define it clearly).

d. The network of applied studies in social, family, and health politics (REA)

Is interested in political aspects of health, family, and social work, notably with regard to questions such as the impact of social or sanitary politics on a population, the consequences of social measures on parental responsibility, or the effect of health politics on care consumption.

Researchers working at UASWS health schools must lodge their project draft to one of these networks before being able to lodge a funding application to the previously mentioned funding structures. They will then receive financial support, allowing them to finance the work performed for their draft preparation.

APPENDIX III – INTERVIEW LAYOUT

1. What is your definition of clinical research?

Take note of the definition and follow-up according to reference criteria

Follow-up according to the completeness of answers and available references in the literature

- a. Show NIH consensus definition (French and English original version)

2. What do you think about this definition?

Take note of the reactions and see if new perspectives of clinical research